

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-17 remain in the application. Claims 13-17 are subject to examination and claims 1-12 have been withdrawn from examination. Claims 1, 13 and 15 have been amended.

In "Claim Rejections - 35 USC § 102" on pages 2 and 3 of the above-identified Office Action, claims 13-17 have been rejected as being fully anticipated by U.S. Patent No. 6,184,049 to Watanabe (hereinafter Watanabe) under 35 U.S.C. § 102(b).

The rejection has been noted and the claims have been amended in an effort to even more clearly define the invention of the instant application.

Claim 13 has been amended to state that components of a process gas are deposited onto a plurality of substrates in the furnace. Support for this amendment is found, for example, on page 4, line 14 and page 26, line 19 of the Specification of the instant application.

Claim 13 additionally states that the substrates are disposed one above another at a short distance to form a stack.

Support for this amendment is found, for example, on page 10, lines 11-14 and page 26, lines 12-13 of the Specification.

Claim 13 also now calls for the device and the regulating unit causing the process gas to flow laterally past the stack defining a main flow direction which changes by 180°. Support therefor is found, for example, on page 14, lines 18-19 and page 28, lines 11-13 of the Specification.

Claim 15 was slightly amended to conform to the changes in claim 13.

It is noted that similar changes were made to method claim 1 since rejoinder under MPEP 821.04 is requested upon allowance of claim 13.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Claim 1 calls for, *inter alia*,

a furnace for vapor phase depositing components contained in a process gas onto a **plurality of semiconductor substrates**, the furnace comprising:

a process space for receiving the semiconductor substrates **disposed one above another at a short distance to form a stack**;

a first feed/discharge line connected to said process space;

a second feed/discharge line connected to said process space;

a device for producing a process gas flow, said device for producing said process gas flow connected to said first feed/discharge line and/or said second feed/discharge line causing the process gas to flow laterally past the stack defining a main flow direction;

a heating device; and

a regulating unit for regulating a magnitude of said process gas flow and for changing the main flow direction by 180°.

The Watanabe reference discloses a method and an apparatus for fabricating compound semiconductor epitaxial wafers. A vapor phase growth apparatus 10 includes a reaction furnace 19 having a wafer holder 17 carrying component semiconductor wafers W1-W3. A group III source gas 13 is introduced into the reaction furnace 19 at an inlet 14 and exits through an outlet 16. A group V source gas 15 enters a supply tube 18 and impinges on the wafers W1-W3 through discharge ports 18a-18c.

More specifically, the source gas is supplied into the reaction furnace of the vapor phase growth apparatus according to Watanabe to epitaxially grow a compound semiconductor film on main surfaces of a plurality of the semiconductor wafers disposed within the reaction furnace. Thus, as described

above, in order to grow the film, one gas flows from one end of the reaction furnace to the other end thereof in such a manner that the flow of the source gas is established along an array direction of the plurality of compound semiconductor wafers. The other gas is supplied dispersively from a plurality of locations half way along the flow of the first gas.

The purpose of the Watanabe apparatus is to overcome the problems of distribution on the wafers, namely that the wafer at the upstream side becomes thicker and the epitaxial layer on the wafer placed closer to the downstream side in the furnace remains thinner.

The subject matter recited in claim 13 of the instant application, as amended, differs from Watanabe in that claim 13 now calls for:

a plurality of semiconductor substrates disposed in the furnace;

the semiconductor substrates are disposed one above the other at a short distance to form a stack; and

the regulating unit changes the main flow direction of the process gas flowing laterally past the stack by 180°.

Clearly, the Watanabe reference does not show or suggest that the semiconductor substrates are stacked one above the other

or that the main flow direction of the gas is changed by 180°, as recited in claim 13 of the instant application.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 13. Claim 13 is, therefore, believed to be patentable over the art. Dependent claims 14-17 are believed to be patentable as well because they all are ultimately dependent on claim 13 and rejoinder of claims 1-12 which have been amended similarly to claim 13 is again requested.

In view of the foregoing, reconsideration and allowance of claims 1-17 are solicited.

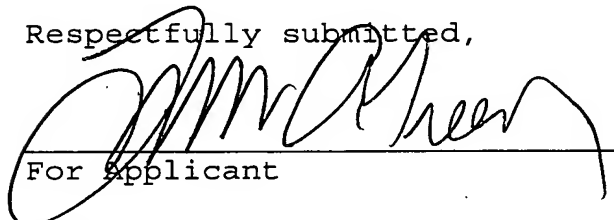
In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

If an extension of time is required, petition for extension is herewith made. Any extension fee associated therewith should be charged to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Appl. No. 10/675,049
Amdt. dated January 4, 2005
Reply to Office action of October 4, 2004

Please charge any other fees that might be due with respect to
Sections 1.16 and 1.17 to the Deposit Account of Lerner and
Greenberg, P.A., No. 12-1099.

Respectfully submitted,



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